

Application No. 10/679,977
Reply to Office Action mailed 15 June 2005

REMARKS

At the time of this Office Action, claims 2, 4-10, 12-14 and 16-20 were pending, claims 1, 3, 11, 15 and 21 having been previously cancelled. No claims are amended at the present time, so no listing of claims is provided.

Election/Restriction

Since the Examiner does not mention the previously-filed election response, it is assumed that the required election requirement has been fully complied with.

Information Disclosure Statement

The Examiner's review of the two Information Disclosure Statements filed in this case is noted and graciously acknowledged.

Claim rejections under 35 USC 102

The Examiner has rejected claims 12-14 and 18-19 as anticipated by US Pat. 6,885,412 to Ohnishi ("Ohnishi '412"). Applicant respectfully traverses.

With regard to claim 12, and contrary to the Examiner's assertion, Ohnishi '412 does not disclose "a metal heater layer integral to said TFT array layer." The Examiner's citation of Col. 12, line 64 to Col. 13, line 2 is not dispositive, as it refers only to the "temperature adjustment member" of Ohnishi '412. However, Ohnishi '412 limits the "temperature adjustment member" to metal oxide films, rather than to a metal layer. See Col. 9, lines 7-24. On the other hand, the present application, at paragraphs [0029] through [0031], makes it clear that a "metal heater" is not a metal oxide film heater. For this reason, claim 12 is considered to be allowable.

If the parent claim (in this case, claim 12) is allowable, then the remaining claims are also allowable as proper dependent claims.

With regard to claim 13, the Examiner states that Ohnishi '412 teaches a metal heater that is patterned onto the TFT array layer. For support, the Examiner cites reference number 8 at Fig. 3, which is the heater. However, the TFT array as reference numerals 11-13, which are on the opposite side of the cavity containing the liquid

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crystal material. Also, there can be no "metal heater" on the Ohnishi '412 TFT array if Ohnishi '412 has no "metal heater" to start with.

Further, with regard to claim 14, the Examiner states that Ohnishi '412 teaches a metal heater layer that is "comprised of a grid of intersecting horizontal and vertical lines," as required by the claim. Applicant respectfully traverses. The Examiner's cited support is from Col. 6, lines 6-24, which is in the "summary", not the "detailed description." Further, the cited language speaks only of a "film" being "patterned" over a "predetermined display area." This is apparently inconsistent with the "detailed description" of Ohnishi '412, which at Col. 9, line 25, says: "in order to realize a uniform liquid crystal display, it is preferred that the uniformly-patterned temperature application section 8 as a heater electrode film is formed across the entire surface or across the pixel regions on at least one side of at least one substrate." This is *not* a teaching of "intersecting horizontal and vertical lines" and there is also no teaching of a "metal heater."

Regarding claim 18, which requires "at least one thermal sensor integral to said TFT array layer," the Examiner cites Ohnishi '412 at Fig. 2 and at Col. 12, lines 54-63. The cited section of the specification indicates that the "temperature detection section" is "not shown." Therefore, Ohnishi '412 is not only non-enabling as to the thermal sensor, but it is also non-enabling as to the claimed location.

Claim 19 goes further than claim 18 and requires that there is "at least one thermal sensor" that is "applied onto said TFT array layer." Ohnishi '412 is simply non-enabling as to these features.

For these reasons, applicant believes that claim 12 and all of its proper dependents are allowable.

Claim rejections under 35 USC 103

The Examiner has made obviousness rejections based on the following combinations of art:

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Ohnishi '412 with US Pat 6,839,104 to Taniguchi ("Taniguchi '104") and US Pat 6,417,900 to Shin ("Shin '900");

Ohnishi '412 with Taniguchi '104, Shin '900 and US Pat 6,774,883 to Muhlemann ("Muhlemann '883); and

Ohnishi '412 and Muhlemann '883.

Applicant respectfully traverses each and every rejection, as detailed below. But applicant first repeats its traverse of the anticipation rejections, because none of the additional cited art references disclose a metal heater that is integral to the TFT array layer.

Claims 5-6 and 16-17, the Examiner admits that Ohnishi '412 fails to teach a black mask EMI layer, but he states that Taniguchi '104 teaches a black mask EMI layer. It is clear from the Examiner's citation that Taniguchi '104 teaches a black mask, but it is unclear that it serves as an EMI layer. It is similarly unclear that Shinn '900 provides the necessary teaching. In any case, these issues are probably mooted by the failure of any cited reference to teach the integral metal heater of claim 12, from which these claims depend. This is especially true with claims 17, 5 and 6, where the metal heater layer must not only be "behind" but also "hidden from view" or "optically hidden from view" by the black mask EMI layer. The Examiner is reminded that Ohnishi '412 teaches an heater made of a "light-transmissive" metal oxide film, which would render a black mask superfluous (at least to hide the heater).

As to claims 2 and 8, an insulating dielectric is used to coat the metal heater. This may be an obvious requirement of the metal heater layer, but the claims are otherwise allowable, as argued with regard to the preceding claims.

As to claims 4 and 7, the applicant repeats its arguments above as to claim 14. The Examiner has incorrectly stated that Ohnishi '412 teaches a patterned metal heater having "a grid of intersecting horizontal and vertical lines." For that reason, claims 4 and 7 are allowable.

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As to claims 9, 10 and 20, the applicant repeats its arguments above as to claims 18 and 19. Ohnishi '412 does not enable a thermal sensor, much less a thermal sensor comprising an array of diodes.

Double patenting

The Examiner has correctly noted that claim 12 is identical to claim 1 of co-pending case 10/769,843. The present case was filed earlier than the '843 application. When allowable subject matter is indicated, this issue may be easily resolved.

The Office Action being fully considered and answered, the case is now ready for allowance, which is earnestly requested.

Respectfully submitted,

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